I CLAIM:

1. A sensor comprising:

a housing having an annular track disposed substantially therein;

a substantially cylindrical contact disposed within the annular track, the substantially cylindrical contact being appropriately sized to allow movement within the annular track;

a plate coupled with the housing, the plate comprising at least one pair of electrical contacts being situated substantially adjacent to the annular track.

2. The sensor of claim 1, wherein at least one of movement and a relative position is indicated by the substantially cylindrical contact creating an electrical connection between a one pair of the at least one pair of electrical contacts.

3. The sensor of claim 1, wherein the substantially cylindrical contact includes helical grooves and associated ridges disposed on an exterior surface.

4. The sensor of claim 3, wherein an electrical connection between the at least one pair of contacts is accomplished, at least in part, via points of the associated ridges being electrically coupled with a one pair of the at least one pair of electrical contacts.

5. The sensor of claim 1, further comprising at least one notch and at least one corresponding protuberance for aligning the plate with the housing.

6. The sensor of claim 5, wherein the plate includes the at least one notch and the housing includes the at least one protuberance, the at least one notch and the at least one protuberance being formed, respectively, on outer radial portions of the plate and housing.

7. The sensor of claim 1, wherein the housing includes one or more pin receiving holes and the plate includes one or more corresponding pins for aligning the plate with the housing.

8. The sensor of claim 7, wherein the plate and the housing further include one or more protrusions having, respectively, a pin and pin receiving hole for aligning the plate with the housing.

9. The sensor of claim 1, wherein the annular track is defined, at least in part, by an outer wall of the housing, an inner wall of the housing, and a face of the plate.

10. The sensor of claim 9, wherein the outer wall includes one or more ramps for reducing a mechanical resistance encountered by the substantially cylindrical contact when entering the at least one pair of electrical contacts.

11. The sensor of claim 9, wherein the inner wall of the housing forms, at least in part, a cylindrical receptacle for accepting a post of the plate, the post having a mounting hole disposed therein.

12. The sensor of claim 11, wherein the housing is coupled with an electronically controlled toy via the mounting hole.

13. The sensor of claim 12, wherein the electronically controlled toy comprises an electronically controlled doll.

14. The sensor of claim 12, wherein the electronically controlled toy comprises an electronically controlled vehicle.

15. The sensor of claim 9, wherein the at least one pair of electrical contacts is disposed radially inward relative to the outer wall so as to affect the angular rotation employed to result in completion of an electrical connection between a one pair of the at least one pair of electrical contacts via the substantially cylindrical contact.

16. The sensor of claim 9, wherein the outer wall of the housing includes at least one recessed portion, the at least one pair of electrical contacts being correspondingly disposed substantially within the at least one recessed portion so as to affect the angular rotation employed to result in completion of an electrical connection between a one pair of the at least one pair of electrical contacts via the substantially cylindrical contact.

17. The sensor of claim 1, wherein a first contact and a second contact of the at least one pair of electrical contacts are sloped relative to each other so as to cradle the substantially cylindrical contact when the first and second contacts are electrically coupled via the substantially cylindrical contact.

18. The sensor of claim 17, wherein the at least one pair of electrical contacts comprise tabs substantially disposed within corresponding slots in the housing so as to maintain the first and second contacts in a substantially predetermined alignment with the annular track.

19. The sensor of claim 18, wherein the plate further comprises cutouts, corresponding proximal ends of the at least one pair of electrical contacts being disposed within the cutouts so as to align the tabs of the at least one pair of electrical contacts with the corresponding slots in the housing.

20. A sensor comprising:

a plurality of radially dispersed pairs of electrical contacts, the pairs of contacts being substantially adjacent to an annular track, the annular track being defined, at least in part, by a housing, and a plate coupled with at least one circuit board; and

a substantially cylindrical contact disposed within the annular track being capable of movement with the annular track;

wherein the plurality of radially dispersed pairs of electrical contacts are coupled with the at least one circuit board, the at least one circuit board having a plurality of electrical conductors to convey electrical signals to and from the plurality of radially dispersed pairs of electrical contacts, the electrical signals resulting, at least in part, from electrically coupling the pairs of radially dispersed electrical contacts via the substantially cylindrical contact.

21. The sensor of claim 20, further comprising a plurality of circuit boards, a respective circuit board of the plurality of circuit boards being associated with each pair of electrical contacts of the plurality of pairs of electrical contacts.

22. The sensor of claim 20, wherein the plurality of radially dispersed pairs of electrical contacts are disposed inward toward a center of the housing relative to an outer wall of the housing.

23. The sensor of claim 20, wherein the plurality of radially dispersed pairs of electrical contacts are sloped relative to one another so as to cradle the substantially cylindrical contact and increase angular dwell of the substantially cylindrical contact within the plurality of radially dispersed pairs of electrical contacts relative to non-relatively sloped contacts.

24. The sensor of claim 20, wherein the plurality of radially dispersed pairs of electrical contacts are disposed outward from a center of the housing relative to an outer wall of the annular track and substantially disposed within corresponding recesses in the outer wall of the housing.

25. The sensor of claim 20, wherein a first contact of each of the plurality of radially dispersed pairs of electrical contacts is electrically coupled with a first electrical conductor and a second contact of each of the plurality of radially dispersed pairs of electrical contacts is electrically coupled with a second electrical conductor via the at least one circuit board.

26. The sensor of claim 20, wherein a first contact of each pair of the plurality of radially dispersed pairs of electrical contacts is electrically coupled with a common electrical conductor and a second contact of each pair of the plurality of radially dispersed pairs of electrical contacts is electrically coupled with a corresponding electrical conductor.

27. The sensor of claim 26, wherein the first and second contacts of each pair of electrical contacts are electrically coupled with, respectively, the common electrical conductor and the corresponding electrical conductors via the at least one circuit board.

28. A method comprising:

providing a sensor having a substantially cylindrical contact disposed within an annular track, the annular track having at least one pair of electrical contacts radially dispersed substantially adjacent thereto; and

generating at least one electrical signal as a result of electrically coupling the at least one pair of electrical contacts via the substantially cylindrical contact.

29. The method of claim 28, further comprising controlling an angular dwell of the substantially cylindrical contact as a result of sloping a first contact of the at least one pair of electrical contacts relative to a second contact of the at least one pair of electrical contacts, such that the first and second contacts are in a substantially v-shaped orientation.

30. The method of claim 28, further comprising controlling an entry angle of the substantially cylindrical contact into concurrent electrical contact with both contacts of the at least one pair of electrical contacts as a result of disposing the at least one pair radially inward relative to an outer wall of the sensor.

31. The method of claim 28, further comprising controlling an entry angle of the substantially cylindrical contact into concurrent electrical contact with both contacts of the at least one pair of electrical contacts as a result of disposing the at least one pair radially outward relative to an outer wall of the sensor, such that the at least one pair of electrical contacts is disposed, at least in part, within at least one corresponding recess of the outer wall.

32. The method of claim 28, further comprising indicating movement of the sensor as a result of detecting a series of electrical pulses resulting from the substantially cylindrical contact electrically coupling, via the substantially cylindrical contact, and electrically decoupling, via removal of the substantially cylindrical contact, the at least one pair of electrical contacts as a result of the sensor being rotated about a nominally horizontal axis.

33. The method of claim 28, further comprising indicating at least one of motion of the sensor and a relative position of the sensor as a result of detecting respective electrical signals corresponding to respective pairs of the at least one pair of electrical contacts, the electrical signals resulting from the substantially cylindrical contact electrically coupling and decoupling the respective pairs as the sensor is rotated about an axis.

34. A sensor comprising:

a housing defining, in part, an annular track;

a movable cylindrical contact contained within the annular track;

a plate coupled with the housing, the plate including one or more pairs of electrical contacts that extend into the housing positioned adjacent to the annular track.

35. The sensor of claim 34, wherein the housing includes an inner wall and an outer wall that define, in part, the annular track.

36. The sensor of claim 35, wherein the outer wall includes one or more ramps for reducing the mechanical resistance encountered by the cylindrical contact when entering the one or more pairs of electrical contacts.

37. The sensor of claim 34, wherein the plate includes cutouts for receiving and positioning the one or more pairs of electrical contacts such that, for each contact, a tab formed on the contact is aligned with an associated slot in the housing, the tab being disposed within an associated slot when the plate is coupled with the housing.

38. The sensor of claim 34, wherein the housing includes a protuberance and the plate includes an associated notch for aligning the housing with the plate.

39. The sensor of claim 34, wherein the housing includes one or more pin receiving holes and the plate includes one or more corresponding pins for aligning the plate with the housing.

40. The sensor of claim 39, wherein the plate and the housing further include one or more protrusions having, respectively, a pin and a corresponding pin receiving hole for aligning the plate with the housing.

41. The sensor of claim 34, wherein the plate includes a post defining a mounting hole, the post being appropriately sized so as to insert into a receptacle defined by an inner wall of the housing when the plate is coupled with the housing.

42. The sensor of claim 41, wherein the housing is coupled with an electronically controlled toy via the mounting hole.

43. The sensor of claim 34, further comprising at least one circuit board coupled with the plate, the one or more pairs of electrical contacts being electrically coupled with the at least one circuit board.

44. The sensor of claim 43 further comprising a plurality of electrical connectors coupled with the at least one circuit board for communicating electrical signals to and from the one or more pairs of electrical contacts as a result of the cylindrical contact electrically coupling individual pairs of the one or more pairs of electrical contacts.

45. The sensor of claim 44, wherein a first electrical connector is electrically coupled with a first electrical contact of each of the one or more pairs of electrical contacts and a second electrical connector is electrically coupled with a second electrical contact of each of the one or more pairs of electrical contacts.

46. The sensor of claim 44, wherein a first electrical connector is electrically coupled with a first electrical contact of each of the one or more pairs of electrical contacts and individual electrical connectors are electrically coupled with respective second electrical contacts of each of the one or more pairs of electrical contacts.

47. The sensor of claim 34, wherein the one or more pairs of electrical contacts are positioned within one or more recesses formed in an outer wall of the housing.

48. The sensor of claim 34, wherein a first and second contact of each pair of the one or more pairs of electrical contacts are sloped relative to one another so as to cradle the cylindrical contact and increase an angular dwell of the cylindrical contact within each pair as the housing is moved.

49. The sensor of claim 34, wherein the cylindrical contact includes helical grooves formed thereon, the grooves having associated ridges, the points of the ridges resulting in an electrical connection between a first contact and a second contact of each pair of the one or more pairs of electrical contacts when the cylindrical contact is appropriately positioned.

Page 26 of 26 - 6/15/2009